

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference SFV 302PCT	FOR FURTHER ACTION <div style="display: flex; justify-content: space-between; font-size: small;"> see Form PCT/ISA/220 as well as, where applicable, item 5 below. </div>	
International application No. PCT/US04/40069	International filing date (<i>day/month/year</i>) 30 November 2004 (30.11.2004)	(Earliest) Priority Date (<i>day/month/year</i>) 05 December 2003 (05.12.2003)
Applicant SAFEVIEW, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the **language**, the international search was carried out on the basis of:



the international application in the language in which it was filed.



a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 7



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/40069

A. CLASSIFICATION OF SUBJECT MATTER

IPC: **G01S 13/89**(2006.01),**7/41**(2006.01)

USPC: 342/179,22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 342/179, 22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

IEEE, terms: millimeter wave imaging

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0130804 A1 (McMakin et al.) 19 September 2002 (19.09.2002), paragraphs 0010,0044,0065-0069, Figures 1, 7, 8	1-2, 4, 7-10, 12-14, 16, 19-27, 29
X,P	US 2004/0056790 A1 (Lovberg et al.) 25 March 2004 (25.04.2004), paragraphs 0006, 0015, 0023-0024, 0027, Figures 3A, 3B, 5, 6, 7A	10-12, 19, 25
A	US 6,057,761 A (Yukl) 2 May 2000 (02.05.2000)	1-31
A	US 5,668,555 A (Starr) 16 September 1997 (16.09.1997)	1-31
A	US 3,713,156 A (Pothier) 23 January 1973 (23.01.1973)	1-31

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:		"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

14 April 2006 (14.04.2006)

Date of mailing of the international search report

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

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Authorized officer

Matthew Barker

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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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520 S.W. YAMHILL STREET, SUITE 200
PORTLAND, OR 97204

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **24 MAY 2006**

Applicant's or agent's file reference

SFV 302PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US04/40069

International filing date (day/month/year)

30 November 2004 (30.11.2004)

Priority date (day/month/year)

05 December 2003 (05.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC: **G01S 13/89(2006.01), 7/41(2006.01)**

USPC: 342/179,22

Applicant

SAFEVIEW, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US
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Date of completion of this
opinion

14 April 2006 (14.04.2006)

Authorized officer

Matthew Barker

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/40069

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>3,5,6,11,15,17-18,28,30-31</u>	YES
	Claims <u>1-2,4,7-10,12-14,16,19-27,29</u>	NO
Inventive step (IS)	Claims <u>3,5,6,11,15,17-18,28,30-31</u>	YES
	Claims <u>1-2,4,7-10,12-14,16,19-27,29</u>	NO
Industrial applicability (IA)	Claims <u>1-31</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-2, 4, 7-10, 12-14, 16, 19-27, and 29 lack novelty under PCT Article 33(2) as being anticipated by McMakin et al.

Regarding claims 1-2 and 4, McMakin et al. teaches the claimed imaging system (Figure 7) with at least a first antenna unit (38) (note Figure 1 and paragraph 0066, lines 12-13) configured to transmit toward and receive from a subject (B) in a subject position, electromagnetic radiation in a frequency range of about 200 MHz to about 1 THz (note paragraph 0010, lines 1-4), from at least one position spaced from the subject position, the antenna unit pivoting about a fixed pivot axis (R) spaced from the antenna unit; the claimed transceiver (42), and the claimed processor (44).

Regarding claims 7-8, McMakin et al. teaches the claimed plurality of antenna units (38), distributed at spaced positions around a subject, each antenna unit adapted to pivot about a respective fixed pivot axis (R), where each antenna unit is adapted to scan across at least a portion of the subject position as each antenna unit pivots about the respective pivot axis.

Regarding claim 9, McMakin et al. teaches that each antenna unit is part of an array (436) of antenna units, and the array of antenna units pivots about the respective pivot axis (R).

Regarding claim 10, McMakin et al. teaches an imaging system including a frame (536) extending around a subject position (see Figure 8), antenna arrays fixedly mounted to the frame at locations distributed around and spaced from the subject position (note paragraph 69). The antennas transmit toward and receive from the subject in the subject position, electromagnetic radiation in a frequency range of 200 MHz to 1 THz (note paragraph 0010). Each antenna array may transmit electromagnetic radiation toward a portion of the subject (B) that does not receive electromagnetic radiation from another antenna array (note paragraph 53, lines 17-18). McMakin et al. teaches a transceiver (42) to operate each antenna array (Figure 1), and a processor (44) to convert the transceiver output into image data (paragraph 0010).

Regarding claim 12, McMakin et al. teaches a method of imaging including transmitting toward a subject (B) in a subject position having a center, electromagnetic radiation in a frequency range of about 200 MHz to about 1 THz (note paragraph 0010, lines 1-4), from at least one position; scanning the transmitted electromagnetic radiation across at least a portion of the subject position from the

**WRITTEN OPINION OF THE
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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

at least one position; receiving from the subject reflected electromagnetic radiation; producing an output representative of the received radiation; and converting the output into image data representative of an image of the subject (paragraph 0010).

Regarding claims 13-14 and 16, McMakin et al. teaches that transmitting radiation includes transmitting radiation from at least one antenna unit (38), and scanning the radiation includes pivoting each antenna unit about a fixed pivot axis that is spaced from the antenna unit (R) (note paragraph 0066).

Regarding claim 19, McMakin et al. teaches that scanning the transmitted electromagnetic radiation includes scanning the transmitted radiation from spaced positions distributed around the subject position (R) (paragraph 0066).

Regarding claims 20-21, McMakin et al. teaches the claimed plurality of antenna units (38) (note Figure 1 and paragraph 0066, lines 12-13) distributed at positions around a subject position, and scanning the radiation includes pivoting each antenna unit about a fixed pivot axis (R) (paragraph 0066).

Regarding claim 22, McMakin et al. teaches that each antenna unit (38) is part of an array (436) of units at each spaced position, and pivoting each antenna unit (38) includes pivoting each array (436) of antenna units about the respective pivot axis (R).

Regarding claim 23, McMakin et al. teaches that each antenna array may transmit electromagnetic radiation toward a portion of the subject (B) that does not receive electromagnetic radiation from another antenna array (note paragraph 53, lines 17-18).

Regarding claim 24, McMakin et al. teaches transmitting radiation from array (436) located at at least three positions spaced around the subject position (note as the array 436 rotates, it is located at many positions) appropriate to direct electromagnetic radiation toward the entire circumference of a subject (B) located in the subject position (paragraph 0066).

Regarding claim 25, McMackin et al. teaches the claimed imaging system (Figure 7) with means (38) for transmitting toward and receiving from a subject (B) in a subject position having a center, electromagnetic radiation in a frequency range of about 200 MHz to about 1 THz (note paragraph 0010, lines 1-4), from at least one position; means (434) for scanning the transmitted radiation across at least a portion of the subject position; means (42) for producing an output representative of the received radiation; and means (44) for converting the output into image data representative of an image of the subject (paragraph 0010).

Regarding claims 26-27 and 29, McMakin et al. teaches that the means (38) for transmitting radiation is at least one antenna unit (38), and the means (434) for scanning is further for pivoting each antenna unit about a fixed axis (R) that is spaced from the antenna unit (paragraph 0066).

Claims 3, 5-6, 15, 17-18, 28, 30-31 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that the pivot axis passes through the antenna unit (claims 3, 15, 28), nor that the pivot axis is between the antenna and the subject position (claims 5, 17, 30), nor that the antenna unit is between the pivot axis and the subject position (claims 6, 18, 31).

Claim 11 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the claimed at least three arrays spaced around the subject position.

Claims 1-31 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.